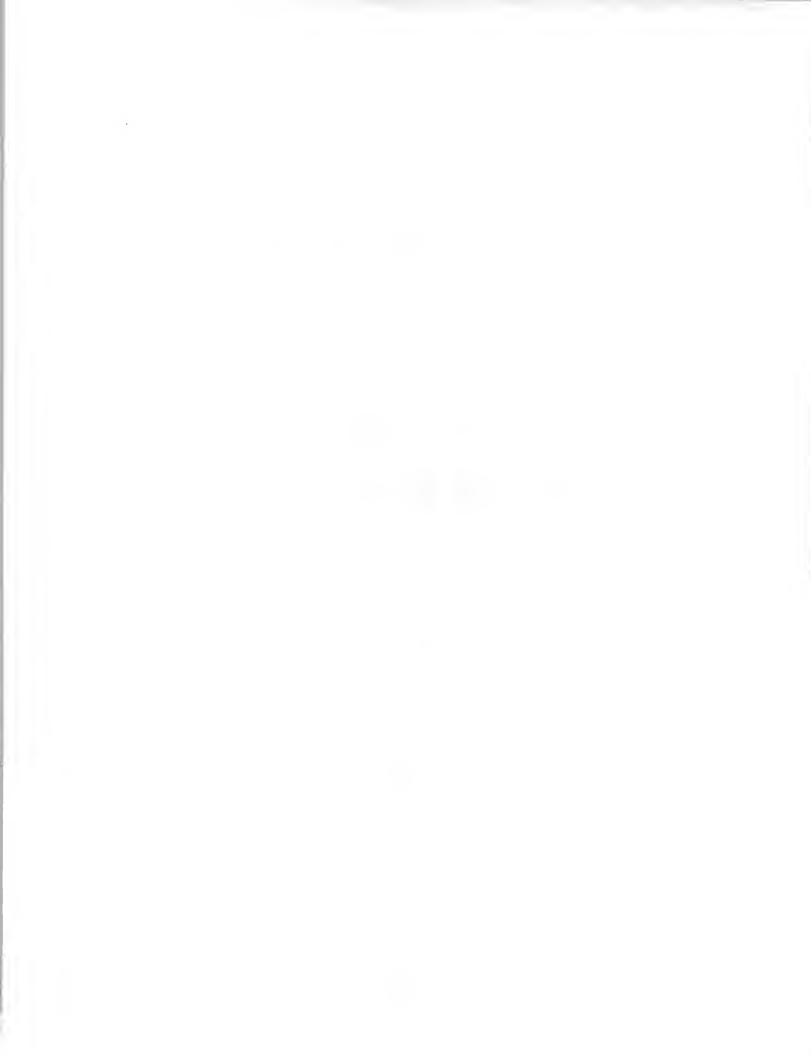

ADVANCED OFFICE SYSTEMS

	Now	Planned
Document Composition Systems	17%	42%
Electronic Filing	8%	42%



Out of 1/3

INPUT®

ADVANCED OFFICE SYSTEMS

	Now	Planned
Document Composition Systems	17%	42%
Electronic Filing	8%	42%

**Data Base Management
Key to Corporate-Wide Systems**

**Peter A. Cunningham
President
INPUT**

**1943 Landings Drive Mountain View, CA 94043
Telephone: (415) 960-3990 Telex: 171407**

Data Base Management
Key to Corporate-Wide Systems

Peter A. Cunningham
President
INPUT

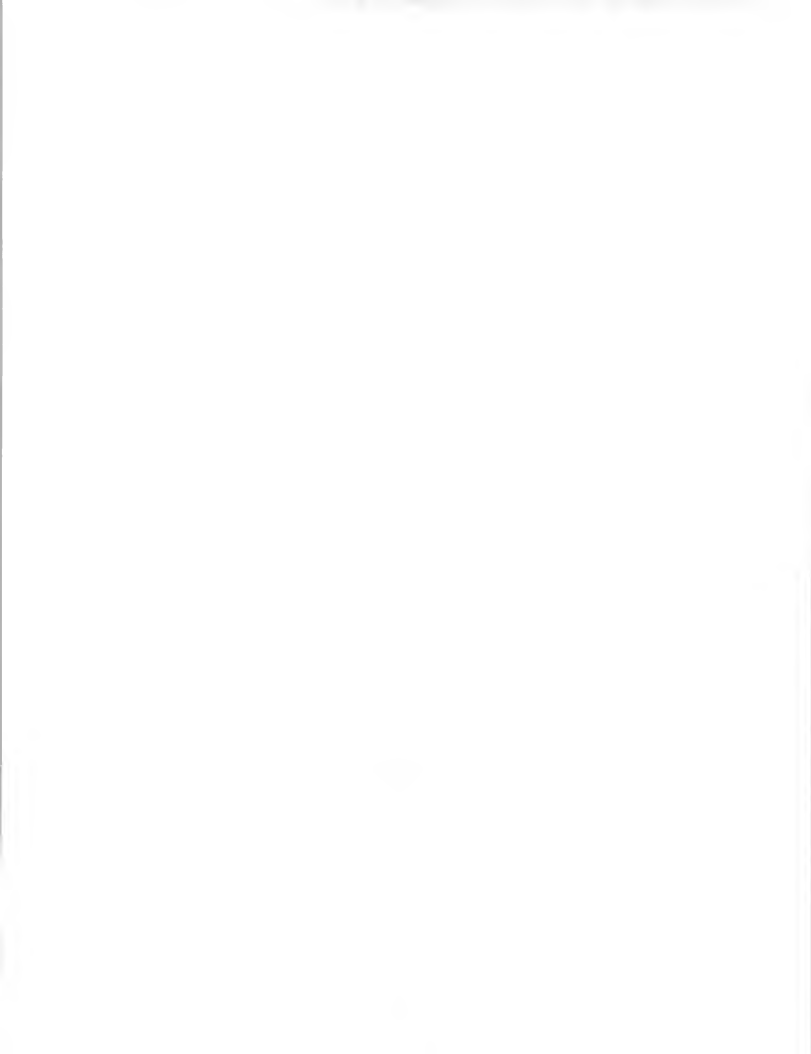


CONTENTS

- **Introduction**
 - **Information Management**
 - **Changing Architectures**
 - **Vendor Roles**
 - **Conclusion**
-



INTRODUCTION

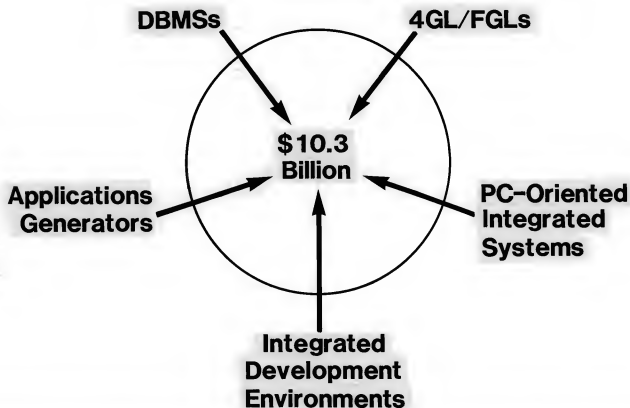


DATA BASE MANAGEMENT

- **Philosophy – Organization**
- **Tools – DBMS**



APPLICATIONS DEVELOPMENT MARKET 1990



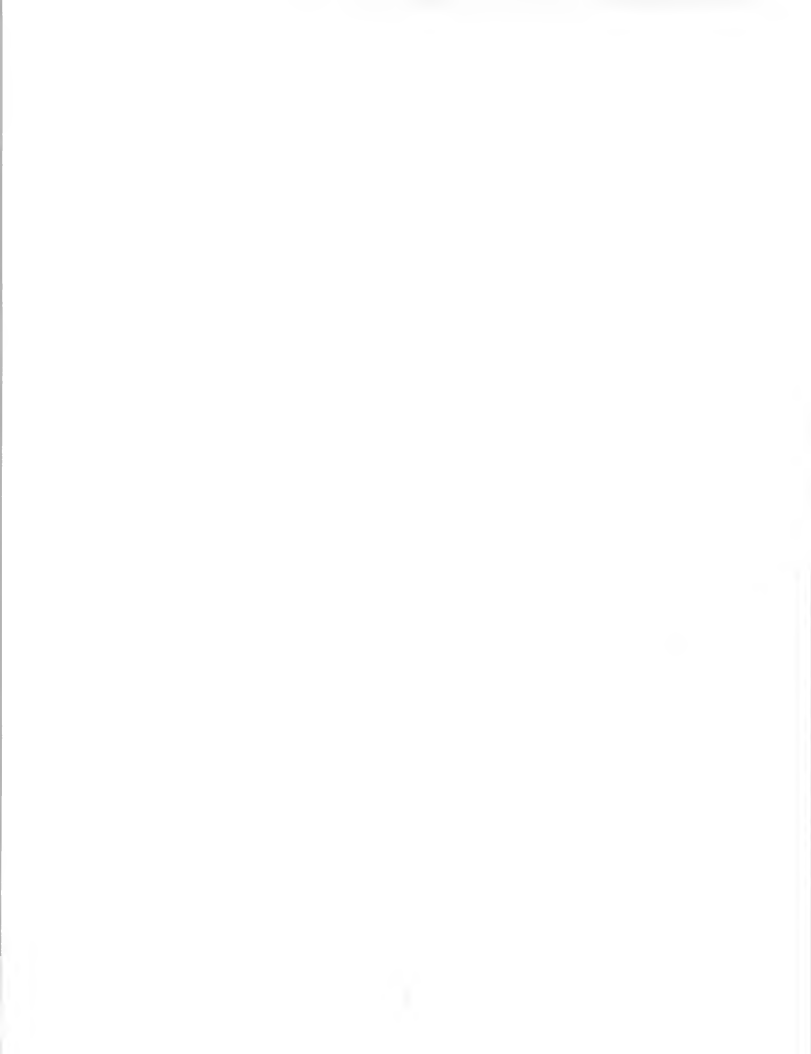
U.S. DBMS MARKET
(\$ Billions)

	1985	1990
IBM	\$0.6	\$3.6
Non-IBM	\$0.4	\$2.8
Total	\$1.0	\$6.4



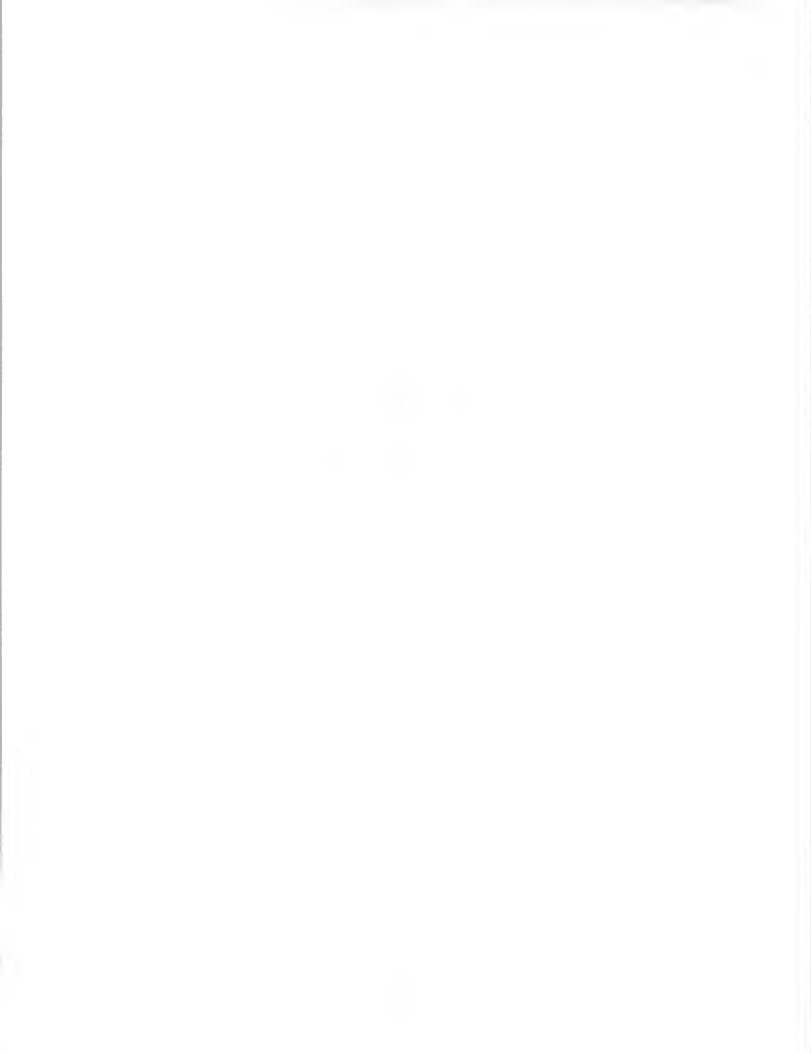
U.S. DBMS MARKET
(\$ Billions)

	1984	1990
Mainframe/Mini	\$0.75	\$5.2
Micro	\$0.25	\$1.2
Total	\$1.0	\$6.4



INTEGRATED DBMS/APPLICATIONS

U.S. Market	\$ Billions
1985	\$0.2
1990	\$5.0



INPUT®

INFORMATION MANAGEMENT



DATA ADMINISTRATION

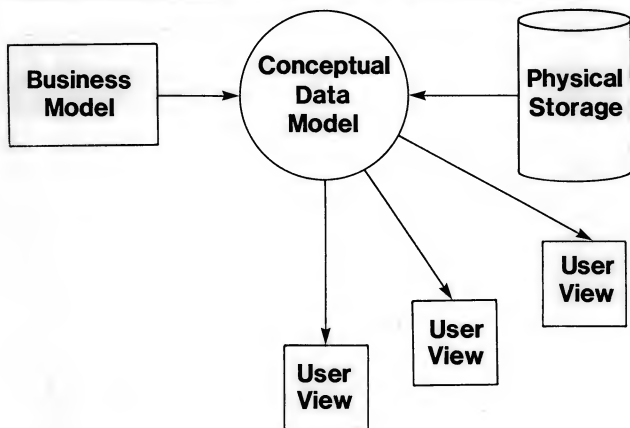


INFORMATION MANAGEMENT

- Planning
 - Organizing
 - Communicating
 - Control
-



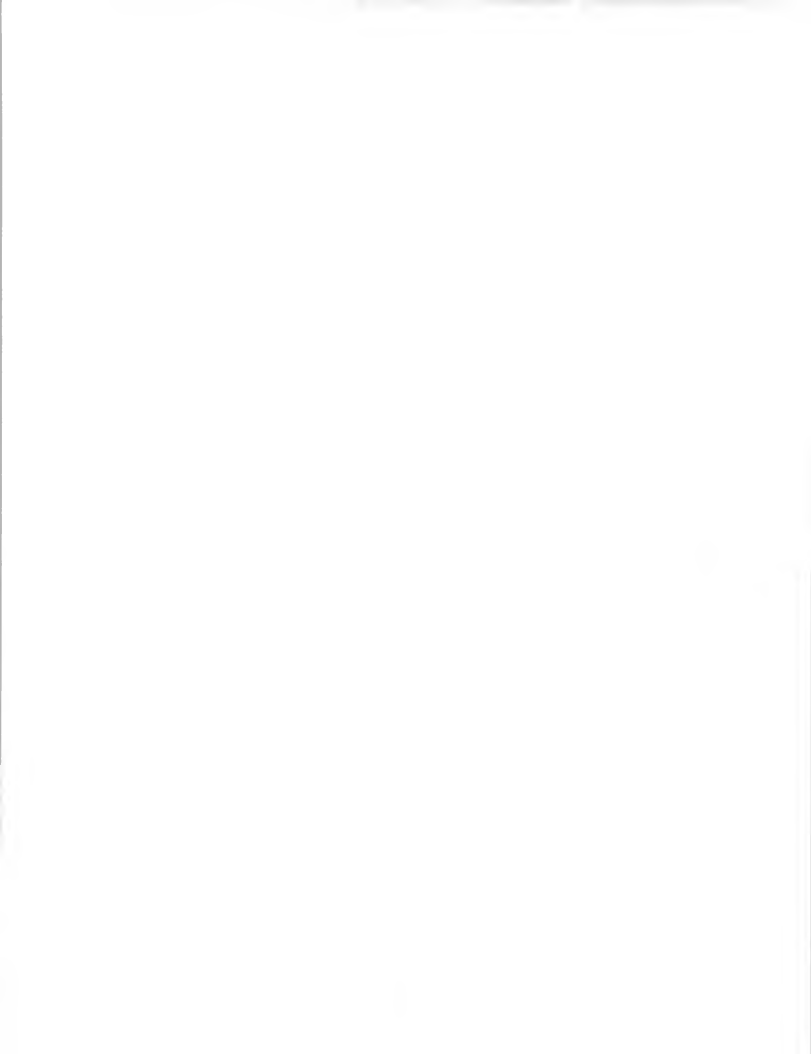
**THE CONCEPTUAL DATA MODEL IS THE
TECHNOLOGICAL KEY TO DATA ADMINISTRATION**





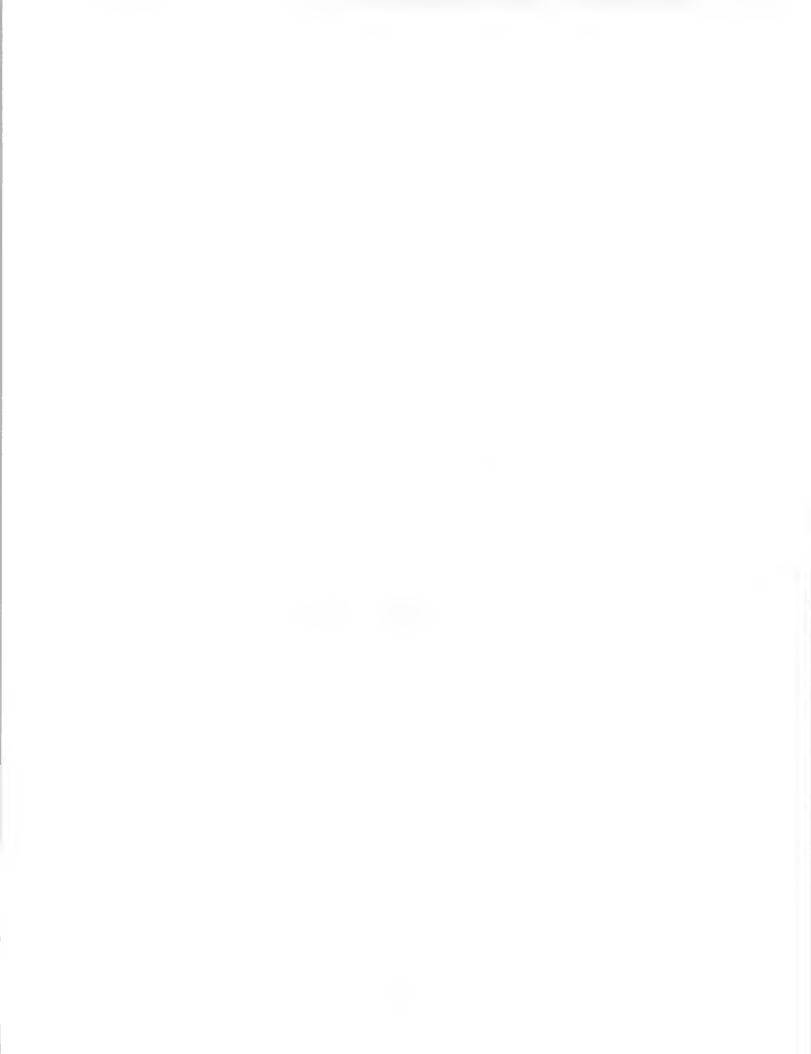
DA BENEFITS

- **Better Use of New Tools**
 - **FGLs**
 - **DSS**
 - **Redundancy Reduced**



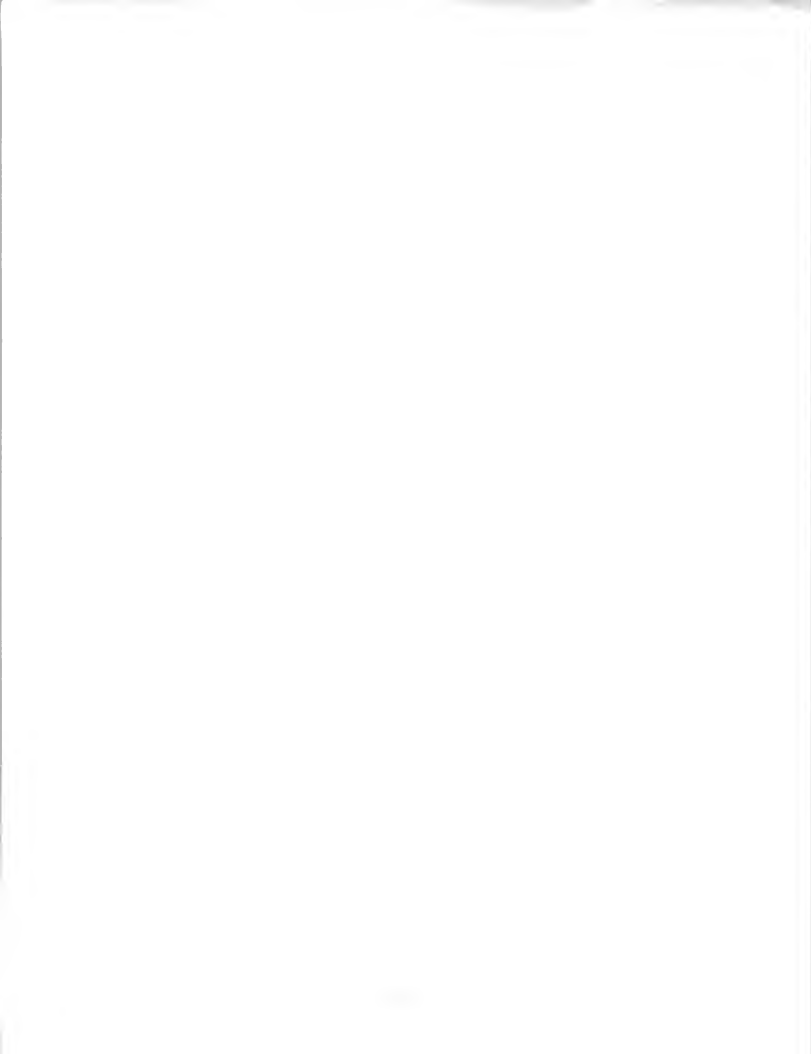
DA BENEFITS

- **Applications Development**
 - **Faster**
 - **Higher Quality**
 - **Packages Facilitated**
 - **Demonstrated Benefits**
-



PROBLEMS WITH DA

- **Business Model**
 - **Very Expensive**
 - **Time Consuming**
 - **Questionable Validity**
 - **Fragile**
 - **Centralized – Counter Trend**
-



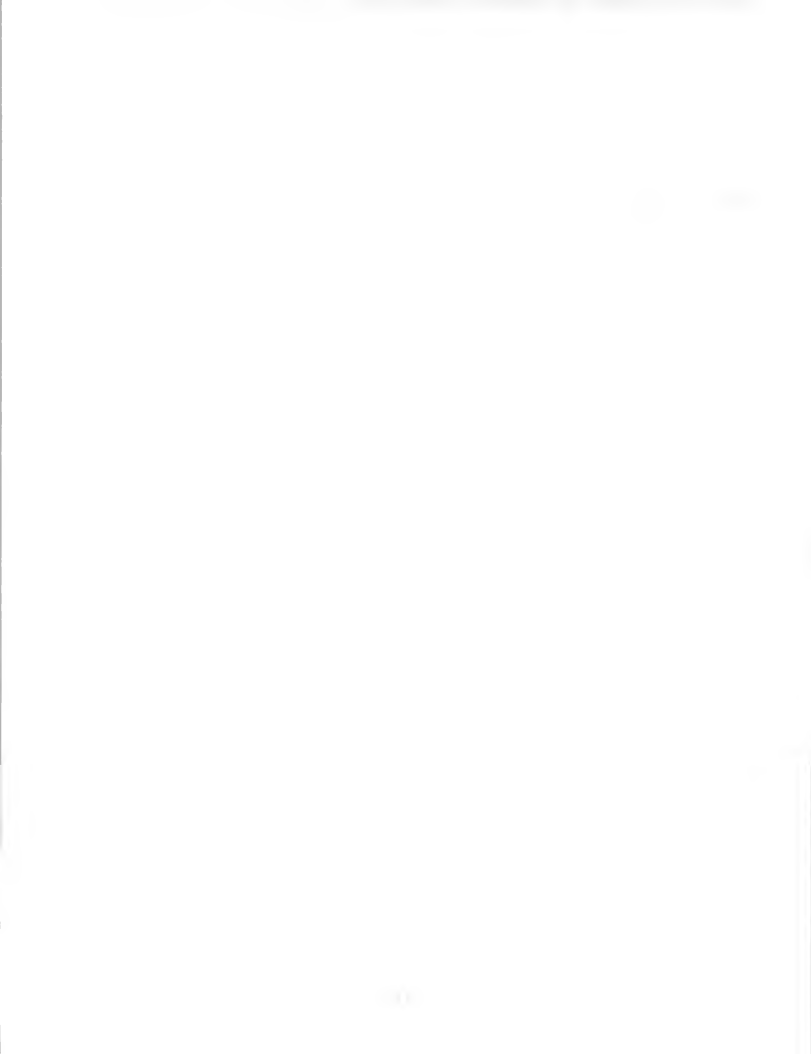
OWNERSHIP

- **Who Owns Data?**
 - **Creator**
 - **User**
 - **DBA**
 - **Corporation**
-



OWNERSHIP

- **File-Oriented, User**
- **DBMS-Oriented**
 - **Owner?**
 - **Administrator, DBA**



DBMS IMPLEMENTATION

- **Training**
 - **Conversion**
 - **Migration**
-



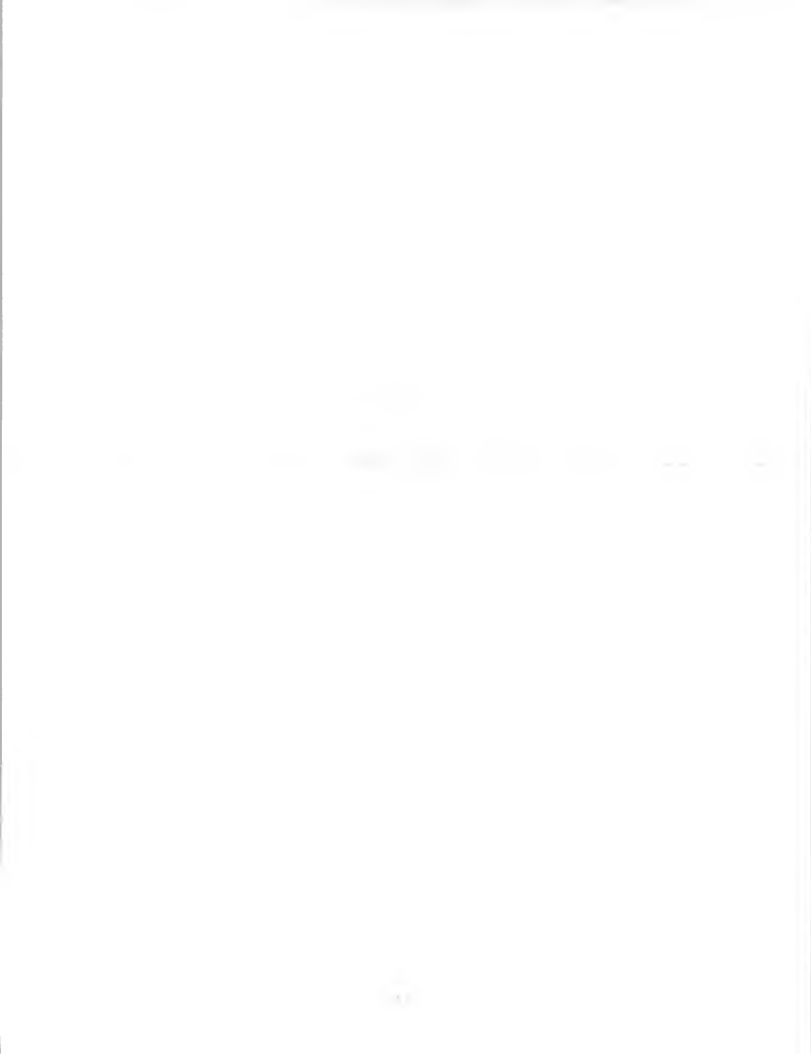
DBMS IMPLEMENTATION

- **Conversion**
 - **Old Applications = Old/No DBMS**
 - **New Applications = New DBMS**
 - **Applications Interface Needed**
-



DBMS IMPLEMENTATION

- **Migration Software**
 - **Reformats Data**
 - **Converts “Calls”**
 - **Takes Time**



CHANGING ARCHITECTURES



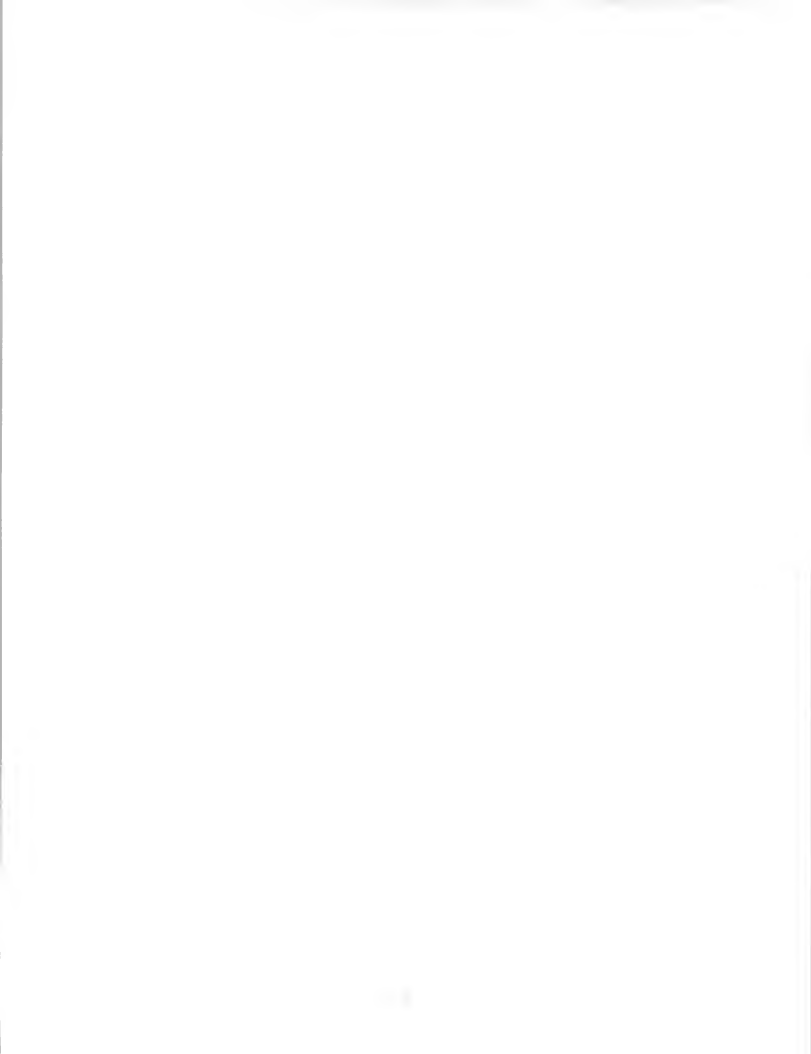
DBMS TECHNOLOGY TRENDS

- **Distributed Data Bases**
 - **Data Dictionaries for Information Management**
 - **Fault-Tolerant, Fail-Safe Architecture**
-



DBMS TECHNOLOGY TRENDS

- **Relational Structures**
 - **Integration with the Office**
 - **Use of New Technologies**
 - **Optical Memory**
 - **Optical Input**
 - **Data Base Assists/Machines**
-



MICRO-MARKET GROWTH

- **Driven by Micro-Mainframe**
 - **Replacing Terminals**
 - **End-User Applications**
 - **“Virtual” Disk**

END-USER AND I.S. VIEW MICRO-MAINFRAME DIFFERENTLY

End Users



- Self-Determination
- Two-Way Data
- Operations and Analytic Use



IS Management



- Control
- One-Way Data
- Analytic Use



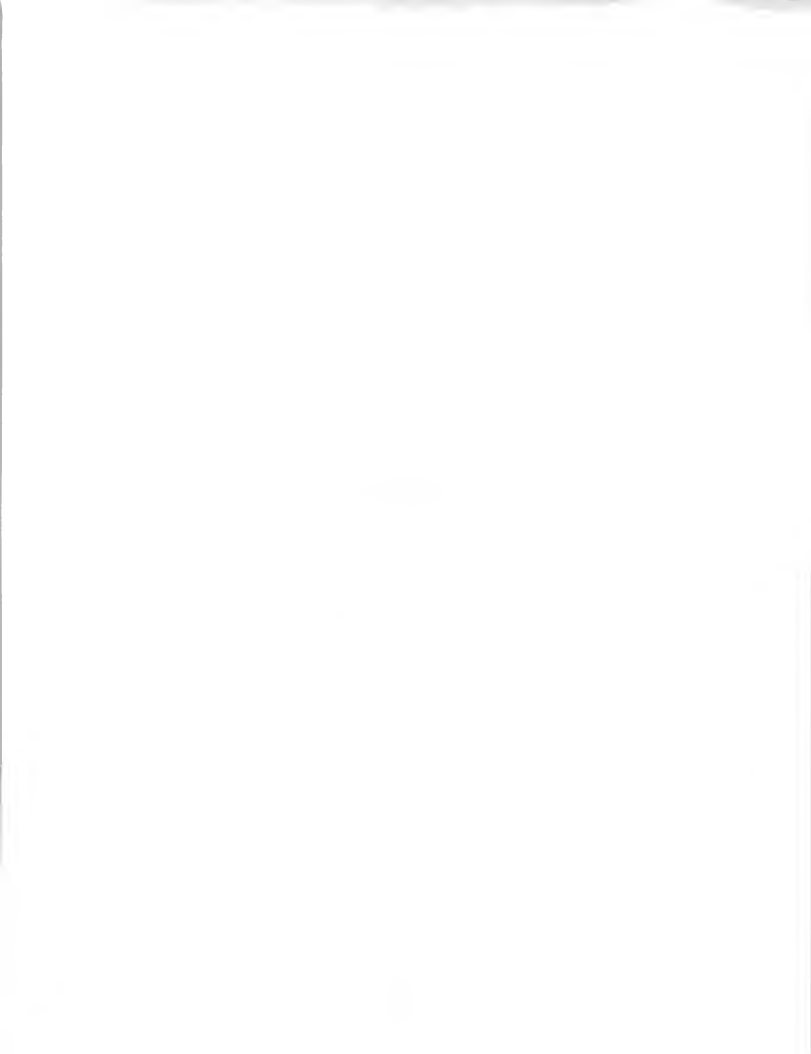
END-USER IMPACT

- **More Applications Development**
 - **Distributed Systems Development (DSD)**
 - **PCs and Workstations with DBMS**
 - **Visual and Voice Communications Add-Ons**
-



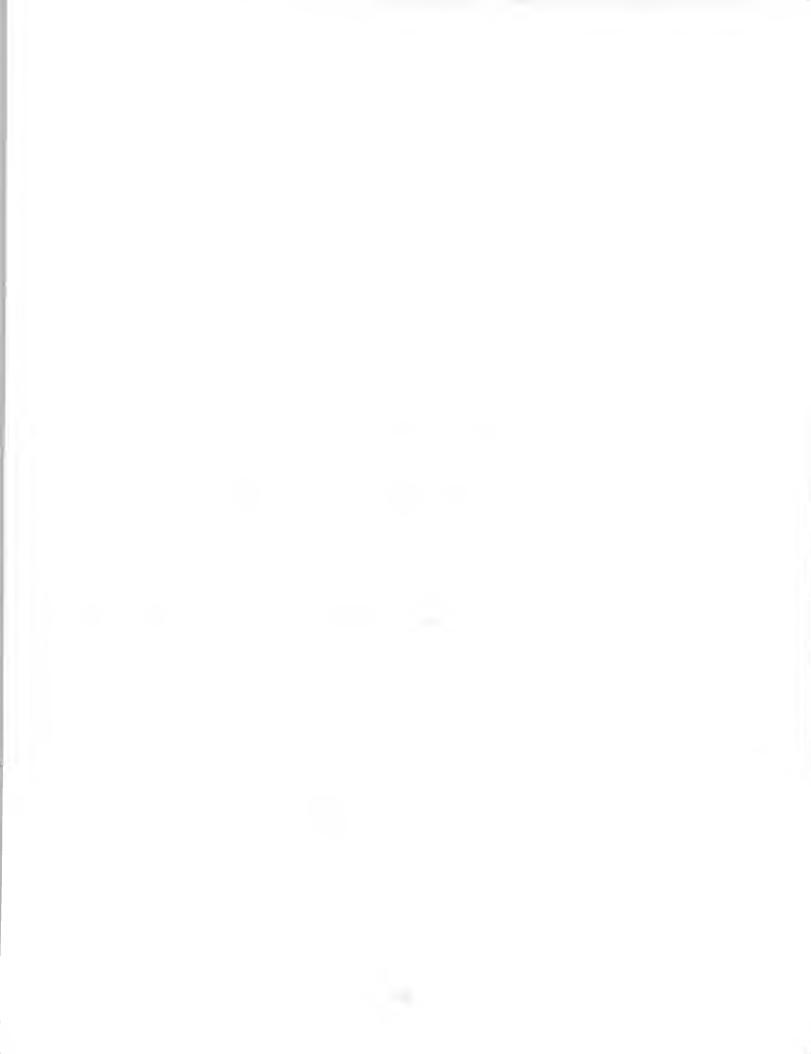
ADVANCED OFFICE SYSTEMS

	Now	Planned
Micro-Mainframe	67%	92%
Local Area Networks	31%	62%
Decision Support Systems	54%	62%



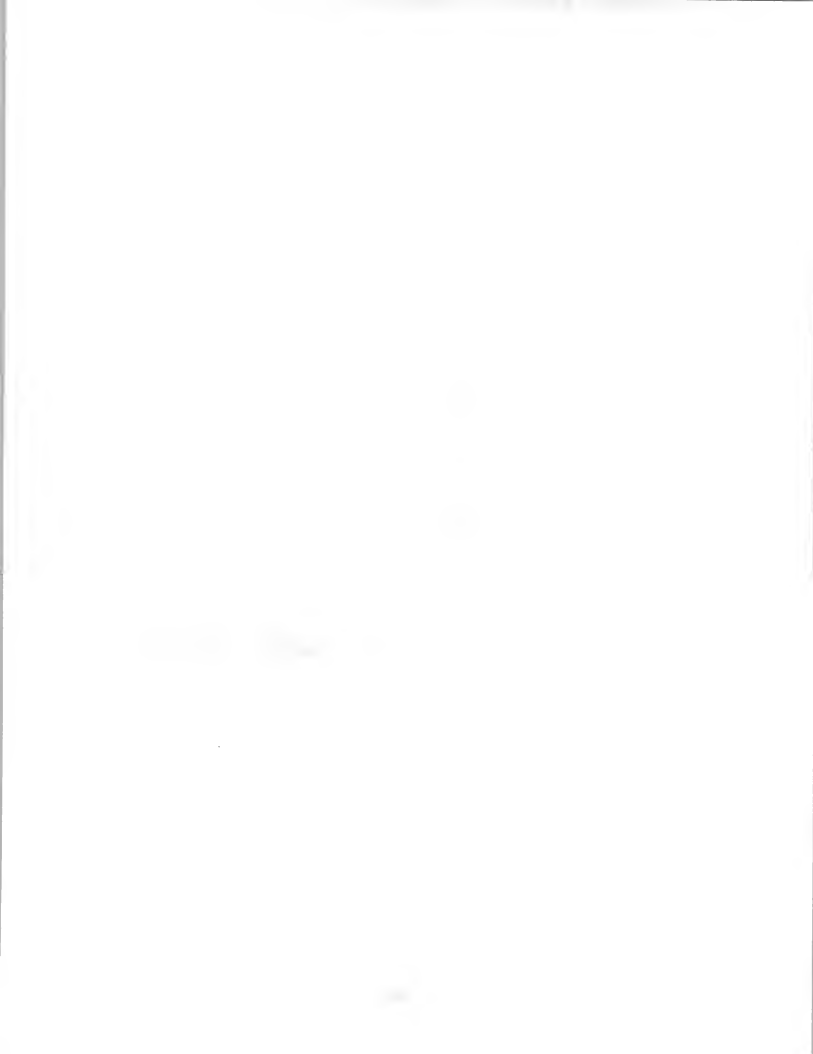
TEXT-ORIENTED DBMS

- **Some Very Old**
 - **Stairs** - **Basis**
 - **Mainframe Oriented**
 - **New Growth from Micro Level**
 - **Informix** - **Airs**
 - **Many Custom Systems**
 - **Dow Jones** - **Dialog**
 - **Mead**
-



DOCUMENT-ORIENTED DBMS

- **Information Management**
 - **Replace Paper Files**
 - **Integrate with Electronic Distribution (EDI)**
 - **New Products Emerging**
 - Day Flo - 4-1-1
 - ZyIndex
-



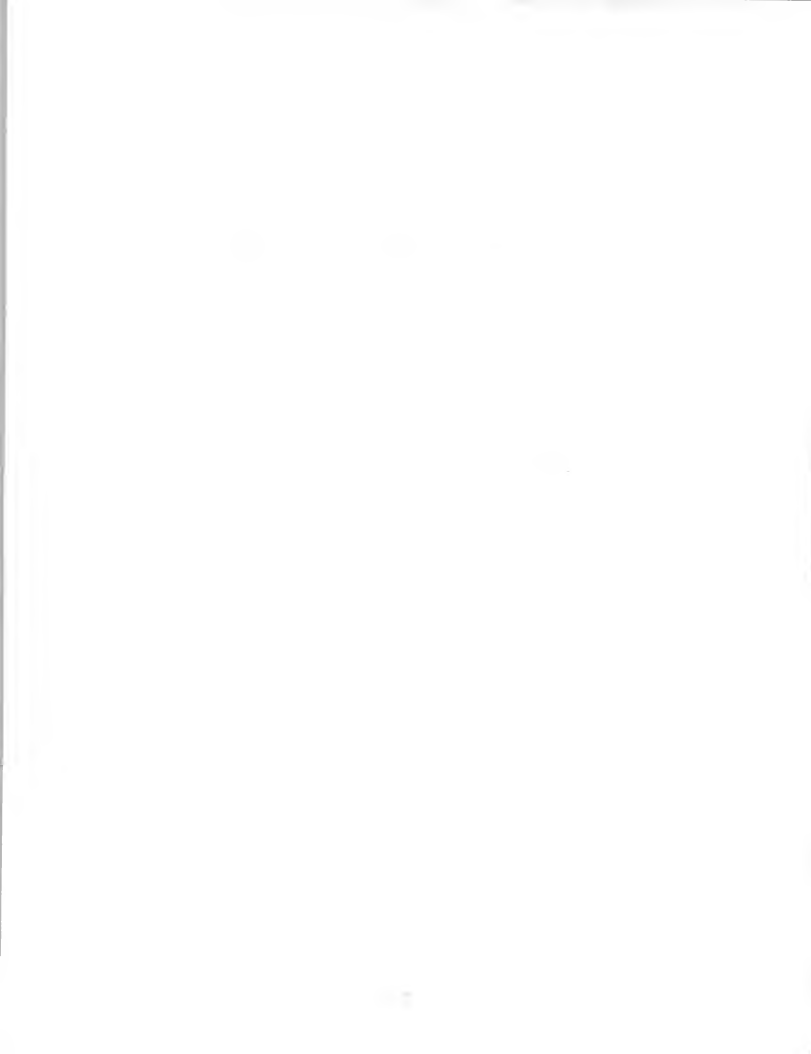
MULTI-USER MICRO DBMS

- **Lan-Based DBMS**
 - **Issues Like Mainframe**
 - **Data Collision Avoidance**
 - **Recovery**
 - **IBM “Standards”**
 - **PC-DOS 3.1** - **NETBIOS**
-



MICRO VS. MAINFRAME DBMS

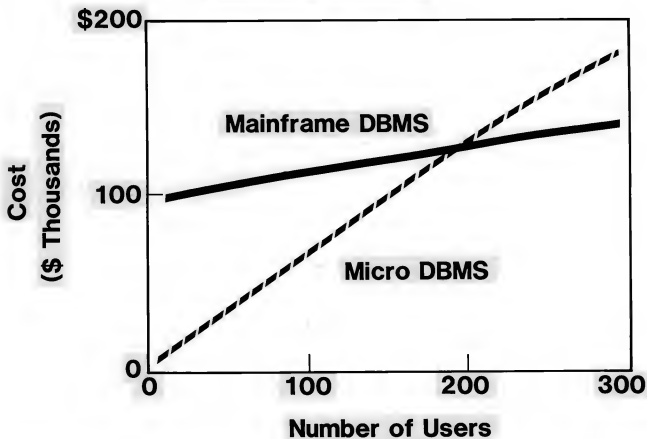
Mainframe	Micro
<ul style="list-style-type: none">• Programmers• Separate DBMS and Language• Separate Training• Batch	<ul style="list-style-type: none">• End Users• Self Contained• CAI• On-Line



MICRO VS. MAINFRAME DBMS

Mainframe	Micro
<ul style="list-style-type: none">• Limited Functions• Multi User• Security Strong• High Cost/Unit• 15 Vendors	<ul style="list-style-type: none">• Extended Functions• Single User• Weak Security• Low Cost/Unit• 150 Vendors

10/1

DBMS COST



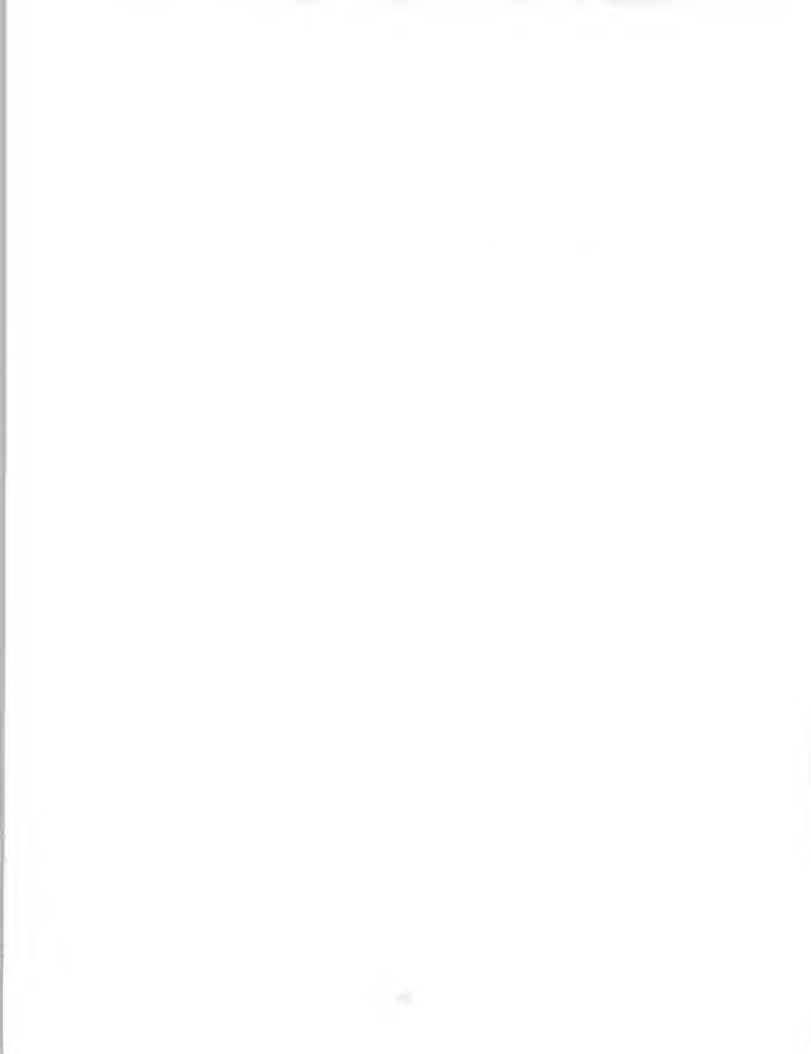
MINICOMPUTER DBMS

- **Under Penetrated**
 - **Except HP**
 - **Have Not Supported Mainframe DBMS**
 - **Caught in the Middle**
 - **Vendors Attacking Now**
-



DISTRIBUTED DATA BASES (DDB)

- **Access “Blind” to Data Location**
 - **Front-End Processor Keeps Control**
 - **Rudimentary Systems As Yet**
 - **RTI INGRES** - **IBM R*** - **CCA**
 - **Often Based on SNA/VTAM**
 - **Performance and Restructuring Problems**
-

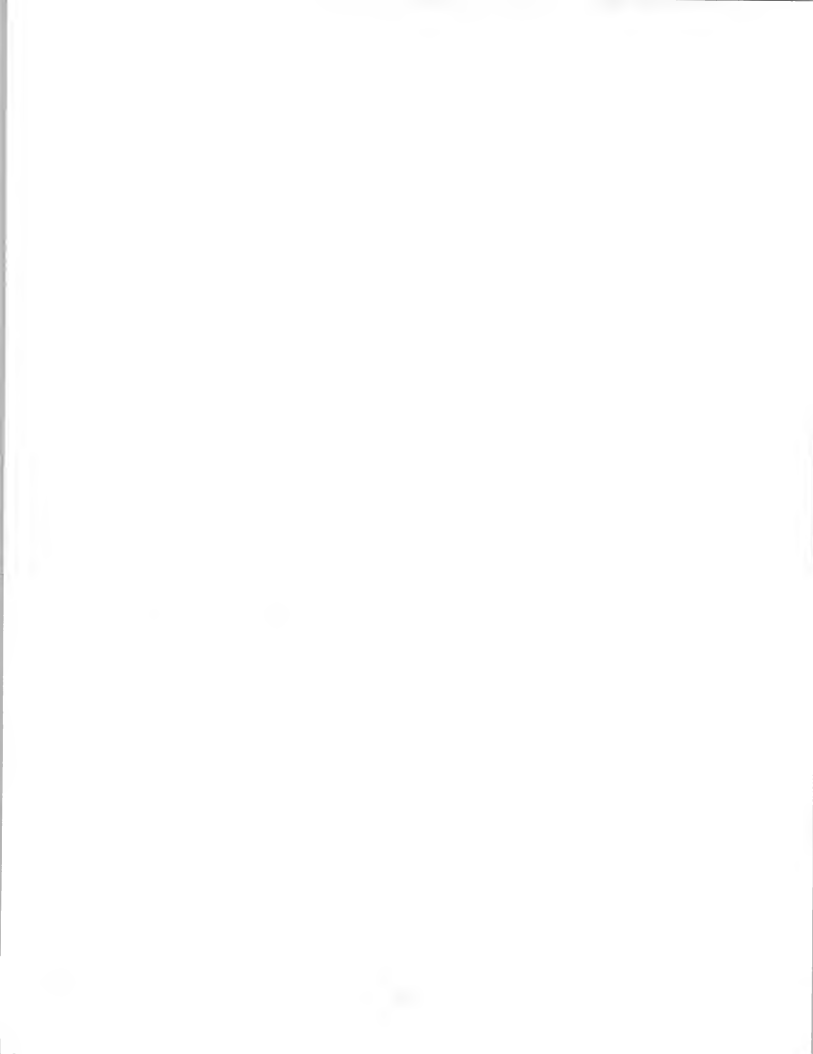


ARTIFICIAL INTELLIGENCE

+

DBMS

- **Power + Ease-of-Use**
 - **ANSA**
 - **Paradox**
 - **Relational DBMS**
 - **QBE-Like Inquiry**
 - **Lotus-Line User Interface**
-

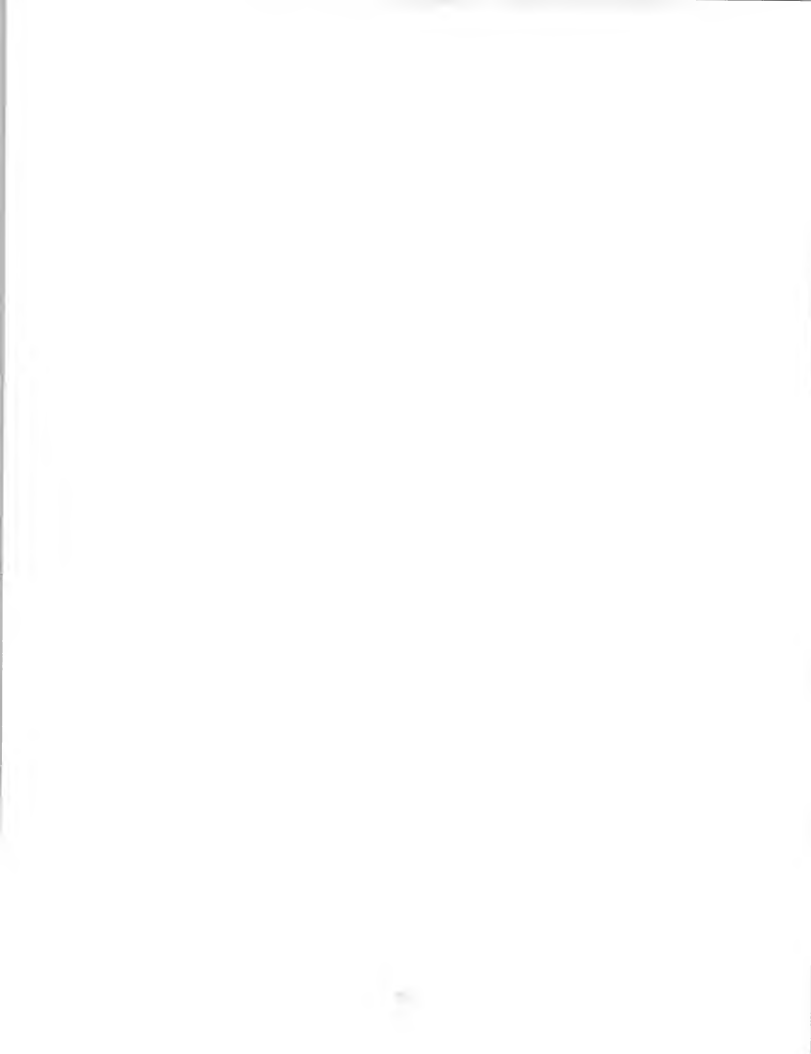


ARTIFICIAL INTELLIGENCE

+

DBMS

- **Semantec**
 - Q & A
 - Word Processor
 - Data Base System
 - QBE Function Like Pfs:File
-



RELATIONAL DATA BASE SYSTEMS (RDBS)

- **Objectives**
 - **End User Access**
 - **Software Development Productivity**



ADVANTAGES

- **Flexibility**
- **Ease of Use**
- **Communicability**



DISADVANTAGES

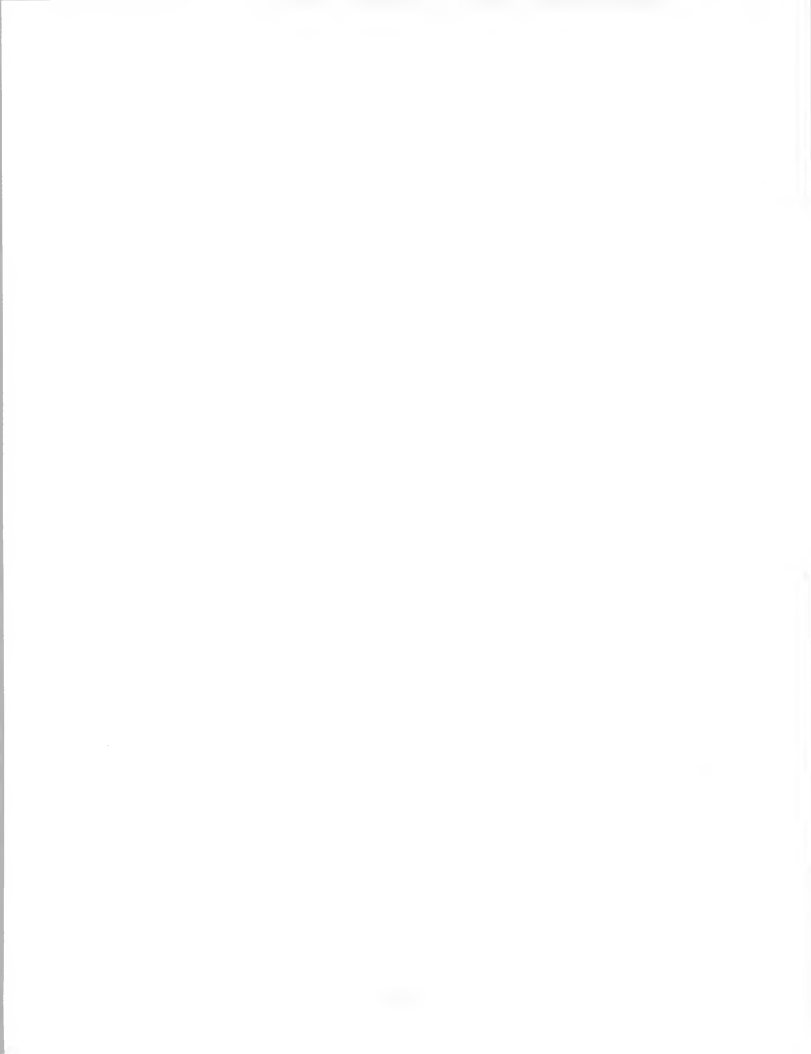
- Performance



RELATIONAL DBMS

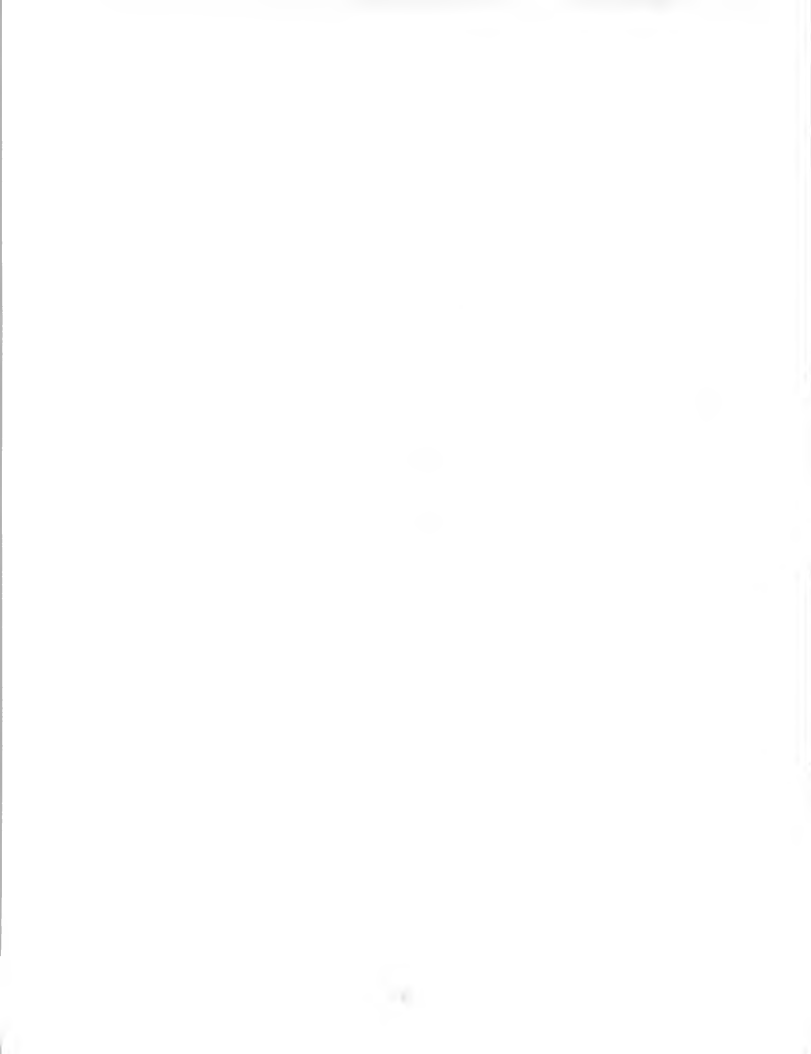
? Do They Actually Exist?

? Does It Matter?



DATA BASE MACHINES (DBM)

- **Off-Load Host**
 - **Improve Performance**
 - **Allow Multi-System Access**
-

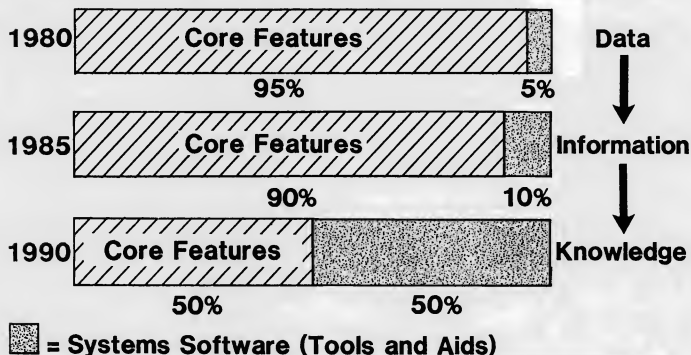


DATA BASE MACHINE

- **Existing**
 - **Britton-Lee**
 - **Teradata**
 - **Potential**
 - **IBM**
 - **DEC**
-



APPLICATION SOFTWARE COMPONENT EVOLUTION



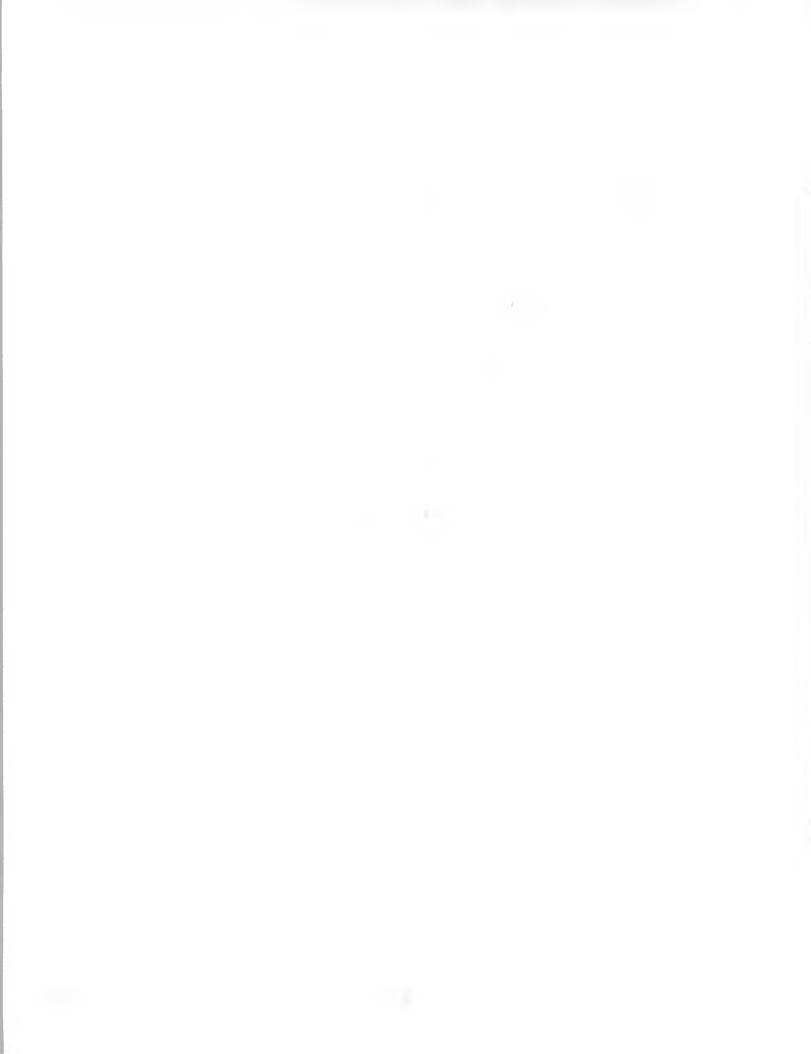


DBMS/APPLICATIONS

High-Level Satisfaction

- Average 3.7

- **Preferred Approach**
 - Add Applications to DBMS**
 - **High Intent to Purchase**
 - 46% by 1987**
-



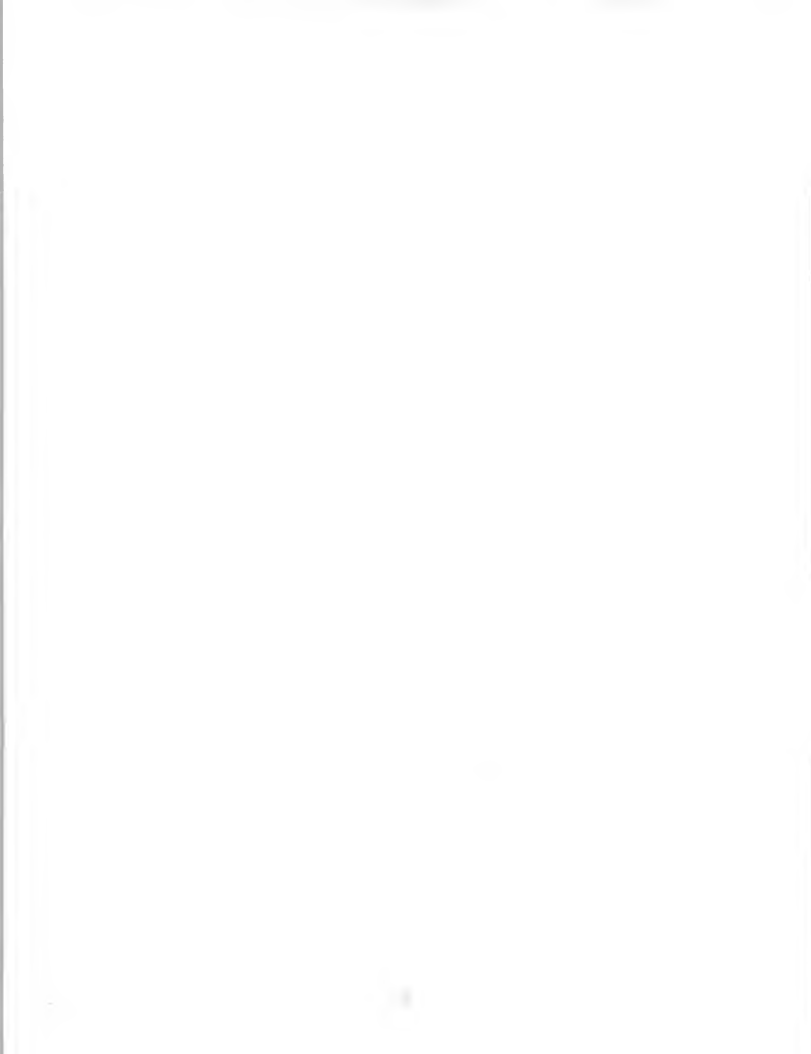
DBMS/APPLICATIONS

- **Preference:**

- Applications Vendor 4.0
 - DBMS Vendor 3.5
 - Hardware Vendor 2.8
 - Third Party 2.6
-

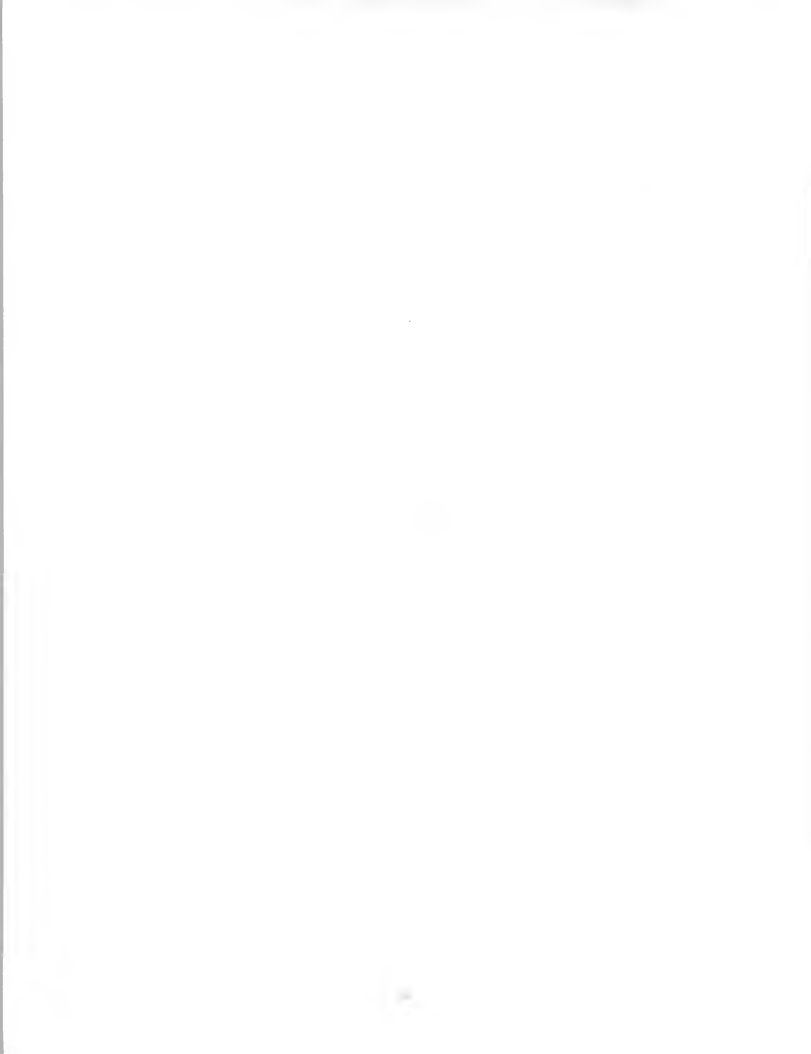


VENDOR ROLES



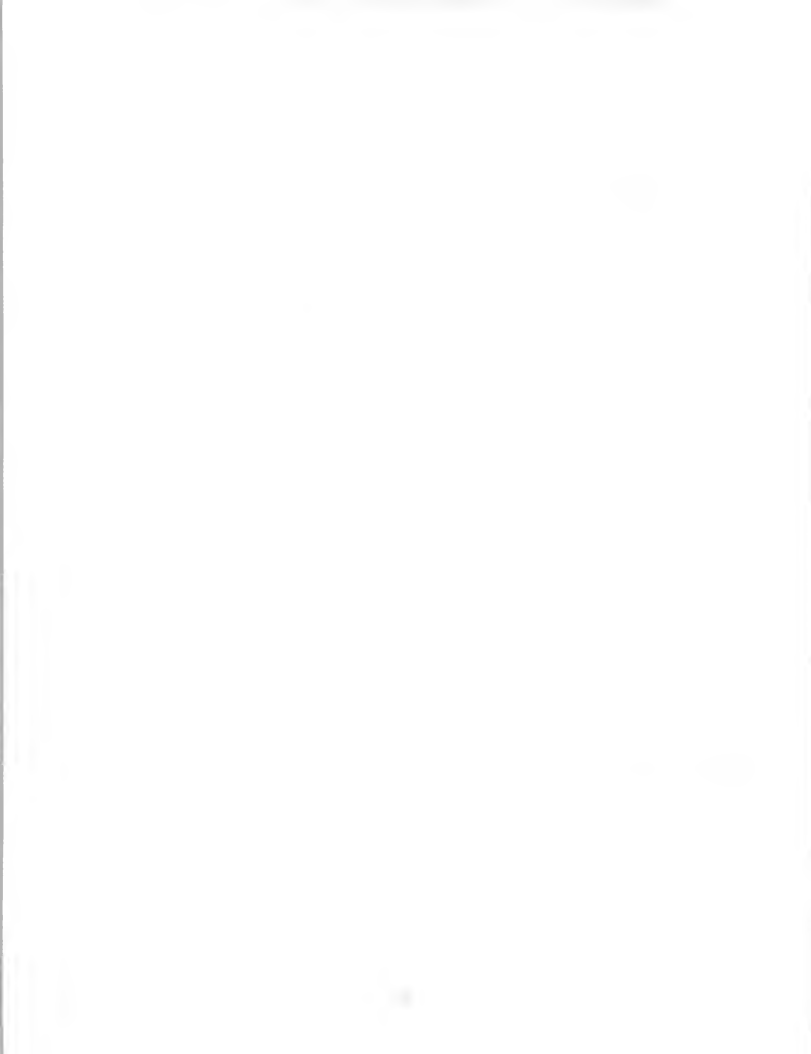
IBM DBMS DUALITY

- **IMS, DL1**
 - **Hierarchical**
 - **Production**
 - **Performance**
 - **Availability**
-



IBM DBMS DUALITY

- **DB2, SQL/DS**
 - **End User**
 - **Ease-of-Use**
 - **Flexibility**



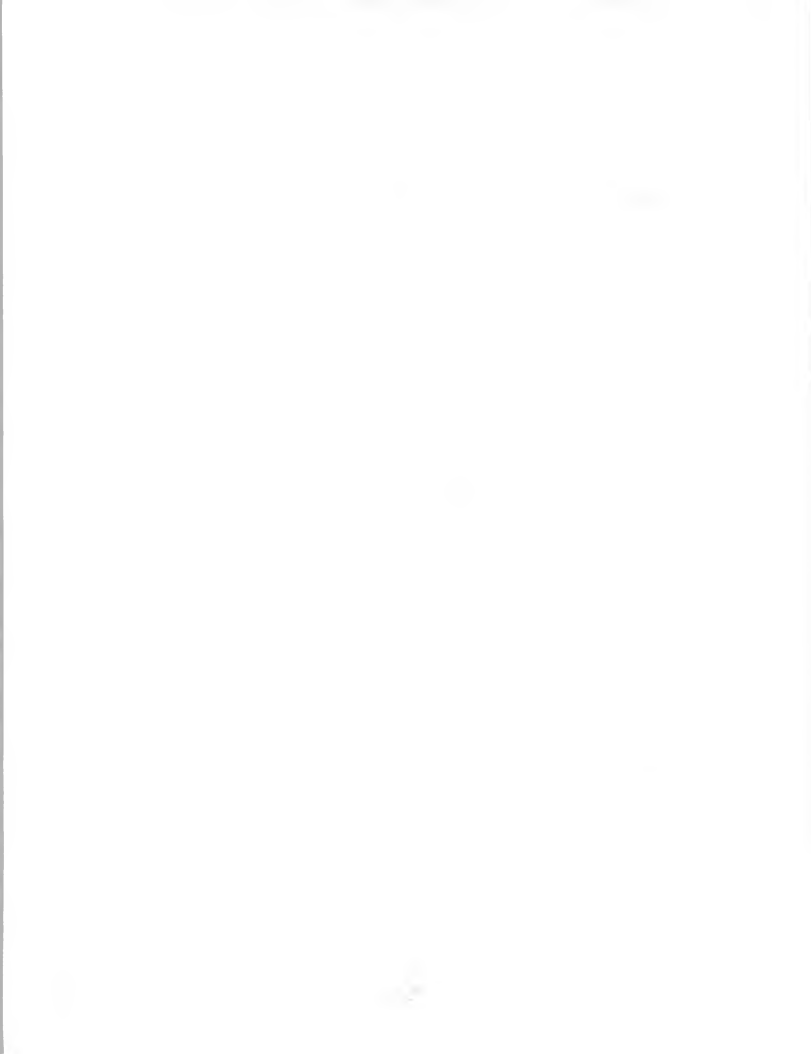
IBM COVERAGE

Data	Voice
Text	Image

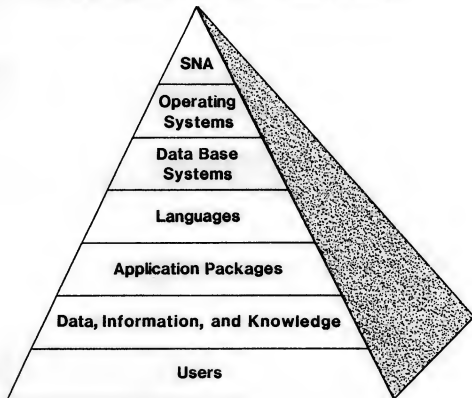
**DISOSS****IMS/DB2**

IBM TRENDS

- **Move Functions to DBMS**
- **Withhold Source Code**
- **Use DBMS to Sell Hardware**



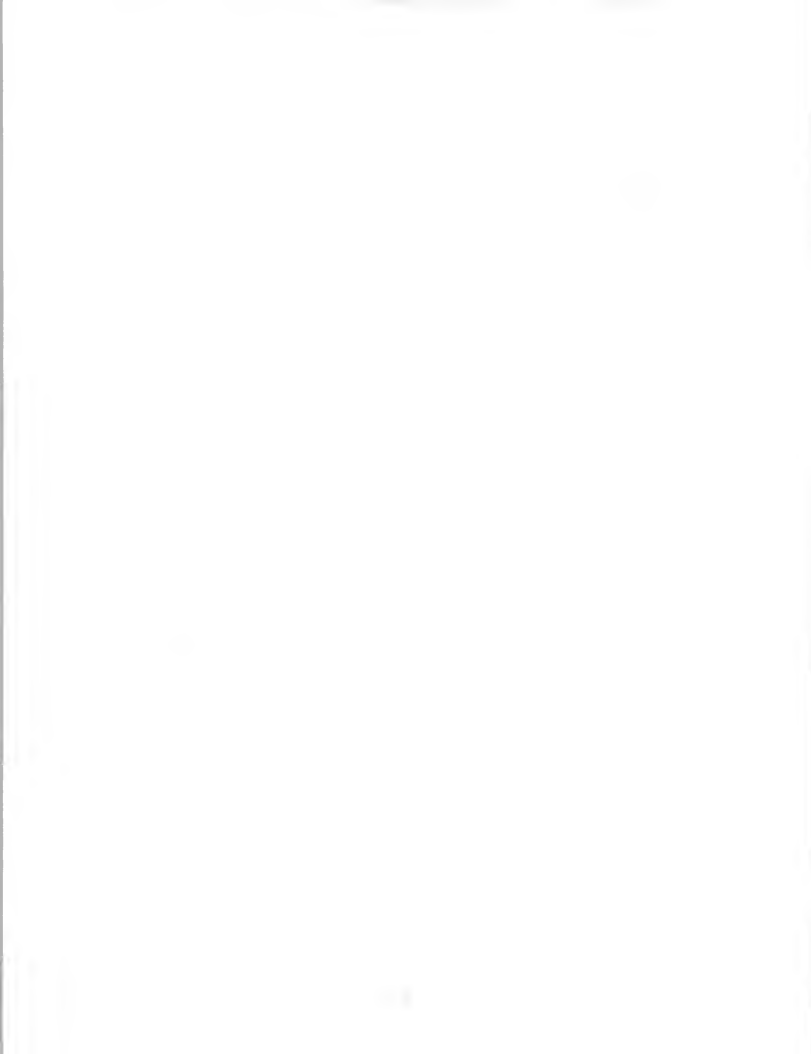
**SNA IS THE CAPSTONE OF
IBM'S SOFTWARE STRATEGY**



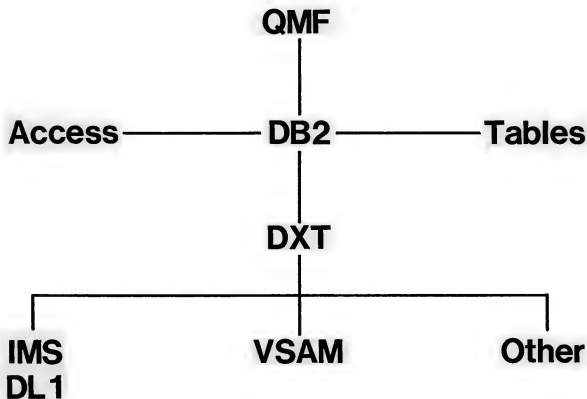


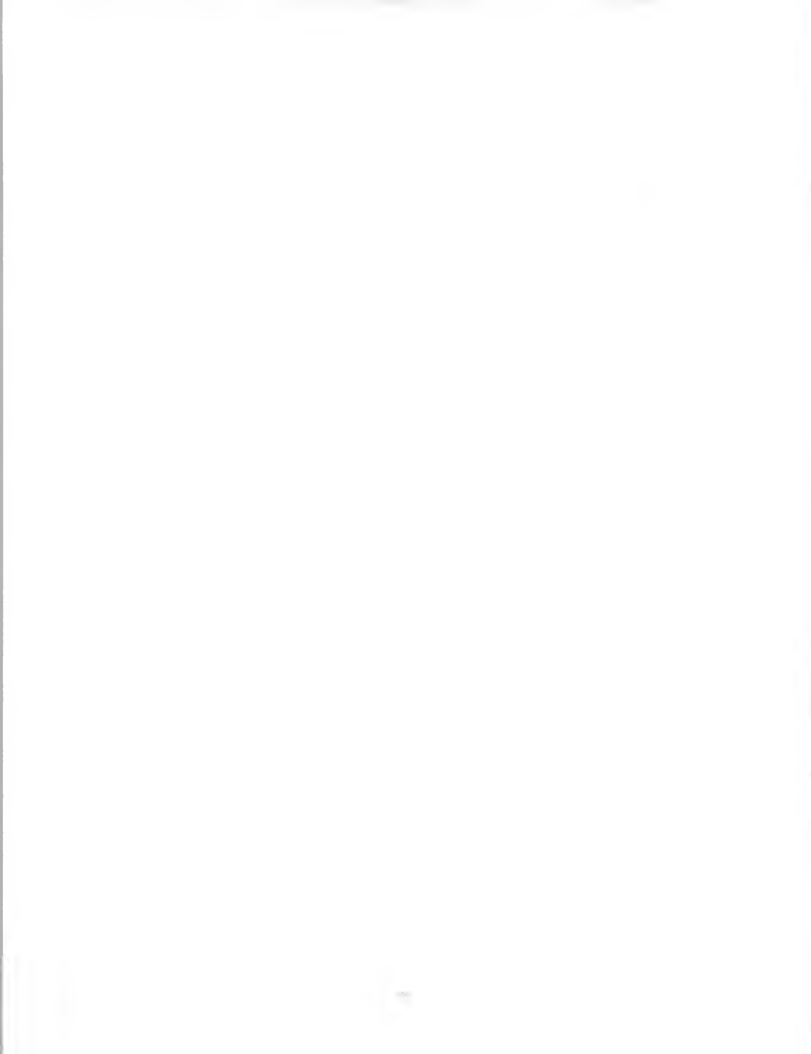
DB2

- **Batch/Interactive Integration**
 - **Integrates Workstations**
 - **Joins Relational and Hierarchical Data**
 - **Performance Bound**
-



IBM DBMS STRUCTURE





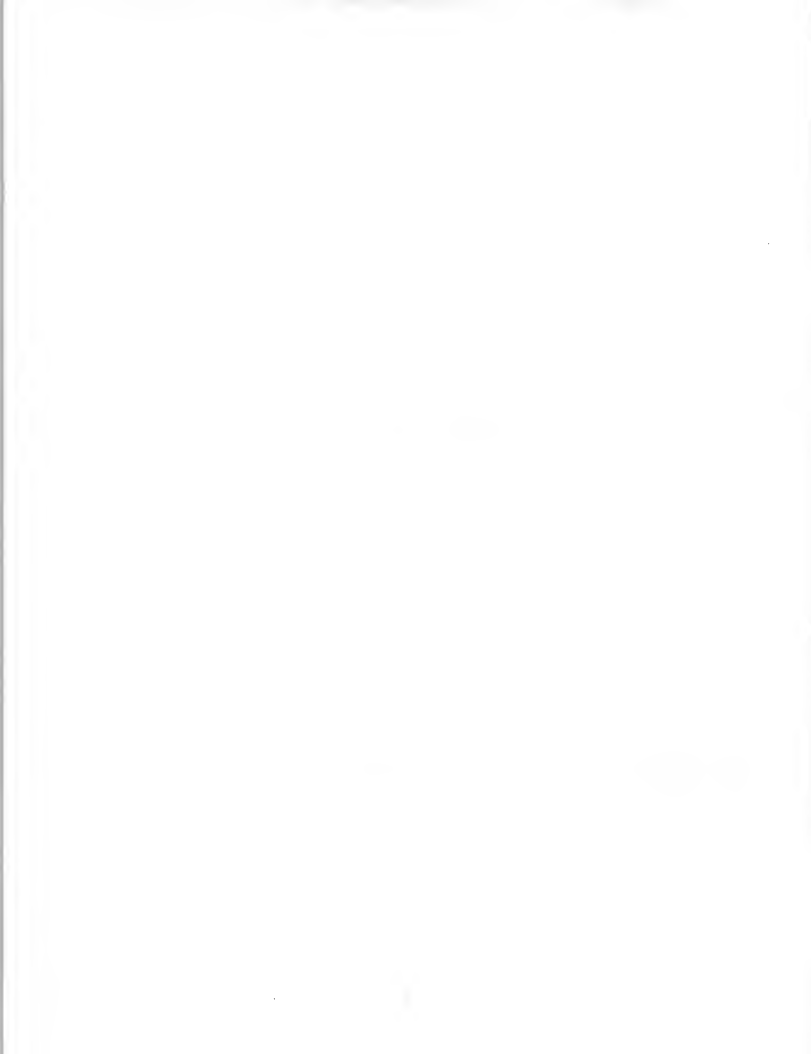
CULLINET DBMS STRATEGY





CULLINET DBMS PRODUCTS

- **12 Products Related to IDMS/R**
 - **Some Alternates**
 - **Expensive and Complex Process**
-



CONCLUSION



DBMS - IBMS

- **Integration**
 - Text - Graphics
 - Data - Voice
- **Add Expert Systems**



NEXT GENERATION OF DBMS

- **Distributed/Networked**
 - **Interconnected**
 - **Relational +**
 - **Information Oriented**
 - **Hardware Assisted**
-



IF

**Information (Data) Is
Corporate Resource**

THEN

**It Requires
Corporate Attention**

